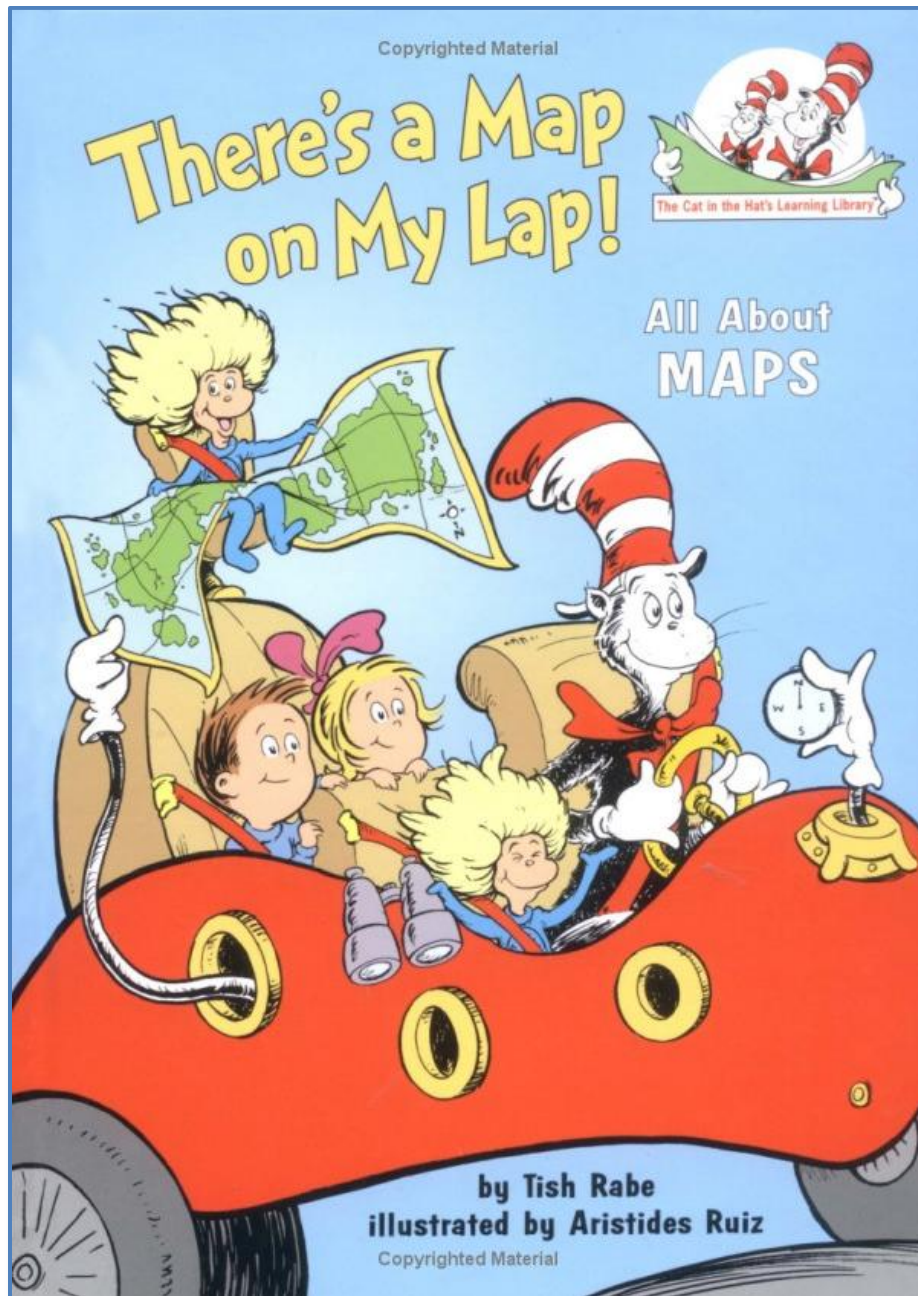2008

GIS Strategic Plan

Continuing the Journey. . . an update on
Using GIS to Move Salisbury from Good to Great

Prepared by Doug Paris, Assistant to the City Manager
For the City of Salisbury, NC GIS Division
August 29, 2008

STRATEGIC PLAN THEME

To mix things up a bit this year with the GIS Strategic Planning process, the book There's a Map on My Lap was used as the theme for the Strategic Plan. Music "Be Our Guest" and "G-I-YES!" greeted participants upon their arrival to the City Council Chamber.

The playful décor and music served to get the creative juices flowing on the Thursday afternoon and Friday morning before Labor Day weekend.

We hope that you enjoy the information contained in this plan, and find GIS to be useful in your day to day activities.

The future of GIS
Where should we go …
Perhaps our customers will know
Let us gather and listen
We shall develop a new plan
To guide our Division

This page intentionally left blank.
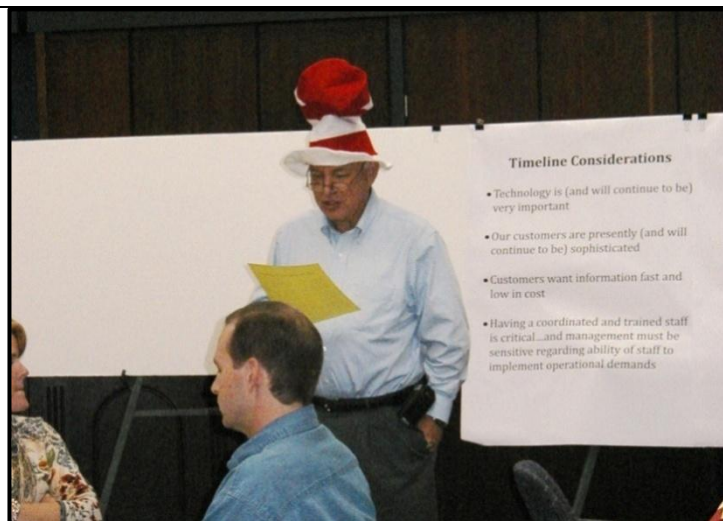
Table of Contents

GIS: More than an Acronym

We begin with raw data
Then we refine it.
We collate, update
Outline and define it.

We'll create an overlay.
We'll put it on computer
With flow charts and pie charts
And info for commuters.

We're big on sticky notes
On polygons, graphics and tables.
We can locate points of interest
And fiber optic cables.

We're all about metadata
Geography and logistics
Topography, technology
And pertinent statistics.

We know where you live
The value of your house.
We can find the shortest route
With a click or two of the mouse.

We can map it, we can graph it.
We've got the information.
We can develop a brochure
Highlighting parks or transportation.

We identify trends
And current demographics.
Using schedules, points and lines
We follow the traffic.

We identify strengths and limitations.
We seek means of improvement.
We know about infrastructure
And the study of movement.

We strive to be useful,
To satisfy a need.
If you wish to grow a database
We've got the seed.

Our work is extensive.
It's interactive and progressive.
It's functional and comprehensive.
We hope it's attractive and impressive.

FROM KATHRYN CLIFTON

Every two years the GIS Division updates our strategic direction to ensure that we are on the right track in partnering with City stakeholders to move from Good to Great. For 2008, GIS focused on facilitating a customer-centric strategic planning session. As service providers, our main role was to listen to our customers tell us how we could better serve their needs and the needs of the city in the future.

Our focus was to brainstorm about what will impact us in the future and to prepare for what our customers will need during that time period. Through this approach, participants prioritized our work focus for the next several years. At the end of the planning session, we had a clear vision for how we can serve more efficiently and effectively by focusing our limited resources on the most important items to our customers. The result was a targeted and tailored approach for the next two years.

GIS provides internal support services to departments that are providing more visible services to citizens and customers of the City of Salisbury. This plan showcases how GIS will impact those visible services over the next several years.

GIS Coordinator Kathryn Clifton discusses the use of GIS for Transit-related projects with Tom Rowan.

FUTURE DIRECTION RESULTS

Participants identified 12 primary data and project priorities for GIS to accomplish over the next several years along with 9 primary online application priorities. Further, participants constructed action plans to accomplish the primary priorities. Participants also identified 24 secondary data and project priorities.

Participants identified 13 tailored training needs for the next several years. GIS will work to develop content and deliver these courses in a customer-friendly manner.

STRATEGIC PLAN DESIGN

FRAMEWORK:

The 2008 GIS Strategic Plan Update was designed with a customer focus. The purpose of the planning process was to engage our customers in a discussion about their future needs. Our role was to listen and develop a plan to tailor GIS services to address what our customers will need during the next two years.

PHILOSOPHY:

The main philosophy was to understand what events from our environment will impact GIS over the next two years, and to determine how we can be a step ahead in serving the customer. Given that both funding and staffing is limited, GIS seeks to understand how we can serve more efficiently and effectively in the future through targeting our limited resources on those items that are most important to the community and to our customers. In order to understand how we should focus our resources, we engaged the participants in a discussion during the planning session on several topics.

Future Direction Questions

1. What events from our environment impacted GIS the most over the last 2 years?
2. What is your vision for the future of GIS over the next two years?
3. What existing data and existing projects should be the primary priority for GIS over the next two years?
4. What new data or new projects should be the primary priority for GIS over the next two years?
5. What applications should GIS focus on developing?
6. How can GIS refocus existing training efforts to better serve your needs?

IMPLEMENTATION:

Going beyond receiving direction on the future needs of GIS customers, participants developed action plans to outline how GIS and GIS customers can work together to accomplish the priorities set out in the plan. The plan paints a conceptual picture of the future, and how it can be achieved:

IDEA → Consensus & Priority → ACTION PLAN
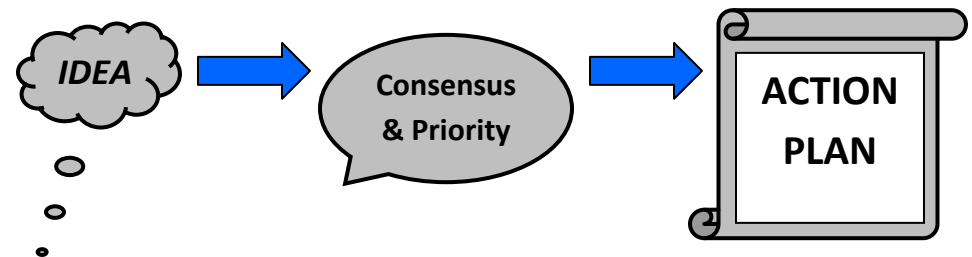
PARTICIPANTS

- Alan Armour   Police
- Kelly Baker   Administration
- Teresa Barringer   Development Services
- Wendy Brindle   Engineering
- Stephen Brown   Parks & Recreation
- Currie Butler   Fire
- Trey Cleaton   GIS
- Kathryn Clifton   GIS
- Rory Collins   Police
- Linda Davis   Cemetery
- Mark Drye   Finance
- Vickie Eddleman   Engineering
- Janet Gapen   Planning
- Elaney Hasselman   Parks & Recreation
- Jerry Hogan   Technology Services
- Jeff Jones   Salisbury-Rowan Utilities
- Patrick Kennerly   Salisbury-Rowan Utilities
- Chris Kepley   Fire
- Mark Martin   Landscape
- Myron Michaels   Traffic Operations
- Dan Mikkelson   Engineering
- Rodney Misenheimer   Fire

- Preston Mitchell   Planning
- Brian Moore   Sanitation
- Marshall Moore   Fire
- Merenda Overcash   Technology Services
- Todd Overcash   Fire
- Bob Parnell   Fire
- Craig Powers   Engineering
- Lynn Raker   Planning
- Darrel Riley   Landscape
- Patrick Ritchie   Engineering
- Tom Rowan   Transit
- Terry Smith   Fire
- Wendy Spry   Salisbury-Rowan Utilities
- Mike West   Salisbury-Rowan Utilities

GIS TIMELINE UPDATE

GIS customers identified the events that impacted GIS the most from 2006 to 2008 in order to brainstorm what environmental factors will influence the division's future visions. Below are the environmental factors that changed the face of GIS since 2006.

2006

- Increased sophistication of public users
- Use of GIS by all departments and many staff
- Connectivity: rise of Blackberries and laptops
- Salisbury Internet mapping online: Using OnPoint
- Countywide color aerial photos
- Increased Training: ARCGIS I & II
- Park maps
- Crime analysis with mapping

2007

- Increased familiarity: Google Earth
- Water and Sewer mapping completed
- Increased accuracy: sub-foot GPS data collectors
- Use of GIS and aerial photography: Alcoa relicensing
- Increased staff: GIS Analyst & Interns at work

- More departments using and requesting GIS data
- Wireless access and handhelds the NORM
- Field access to water & sewer payment data
- Projectors allow use of real-time GIS in meetings

2008

- Integration of GIS with Cogsdale CRM
- TheAddresser
- Use of GIS in Millwork Fire and Highway 150 study
- Planning for Fiber to the Home
- Data collected – focus is on analysis with data
- Using data to model land-use: CommunityViz
- Water meter "Points of Service" data layer
- Police mobile data terminals

Landscape Architect Lynn Raker places her items on the presentation board.

GIS TRENDS & VISIONS

Looking to the future, participants stated that GIS should become more web-based and that accessibility will need to be expanded so that GIS can be accessed at the touch of the button anywhere on a mobile interface. Participants further advised that GIS will need to be linked to our customer service software, allowing customer service representatives to have data at their fingertips to solve customer problems and answer questions. Two years from now customer connectivity will be increased and the average GIS customer will be much more sophisticated in terms of data consumption and using GIS data for analysis to influence decisions.

During the opening icebreaker, participants were asked to look into the future *creatively* through writing visions about how GIS will impact our community. Participants authored and published the following headlines for our community in the future years of 2013 and 2018:

- *"City Locates Body of Jimmy Hoffa in Cemetery GIS Database"*
- *"Gangs Eliminated Through New GIS Tool"*
- *"At the Touch of a Button, Salisbury Customer Service Reps use Instant GIS Data to Solve Citizen Problem."*

- *"Clifton New City Manager: City Agenda GIS-Focused and Information at Citizens' Fingertips"*

DATA & PROJECTS

PRIMARY PRIORITIES: Participants reviewed existing data and project priorities from previous strategic plans and also brainstormed new data needs and projects for GIS to accomplish during the next two years. Given that resources are limited, these items were ranked and prioritized by the participants and will become the GIS Division's main focus over the next two years.

2008-2010 Primary Priorities: Existing

1. **Backflow Prevention Devices – Location:** Needed for inspection & enforcement (7 votes)
2. **Location of Fiber-Optic Cable System:** Data Layer showing location of lines (6)
3. **Greenway Marked & Mapped:** For recreation and emergency response (6)
4. **Bus Route & Bus Infrastructure:** Data layer showing stops, shelters, and schedule (5)
5. **GIS Based Work Order System:** Design a system tailored for GIS (5)
6. **City-Wide Security Cameras[±]:** Data layer showing location of cameras and link to live picture (4)
7. **Street-Tree Inventory:** Data layer showing location of trees and descriptors (4)

[±] GIS Division would serve in an advisory capacity on this goal.

2008-2010 Primary Priorities: New

1. **Police Real-Time Unit Tracking[±]:** Tracks current and historical police unit locations (7 votes)
2. **Cemetery GIS Data:** Data layer and online map of city cemeteries for customer access (5)
3. **Water-Sewer Line Break Locations:** Data layer showing breaks in order to analyze trends (5)
4. **"City Owned" Street Light Layer:** Data layer showing location of new street lights within city (5)
5. **Storm-Water Best Management Practices Locations:** Data layer showing location – needed for enforcement (4)
6. **Fats, Oils, and Grease Program:** Data layer showing grease trap locations [state mandate] (3)
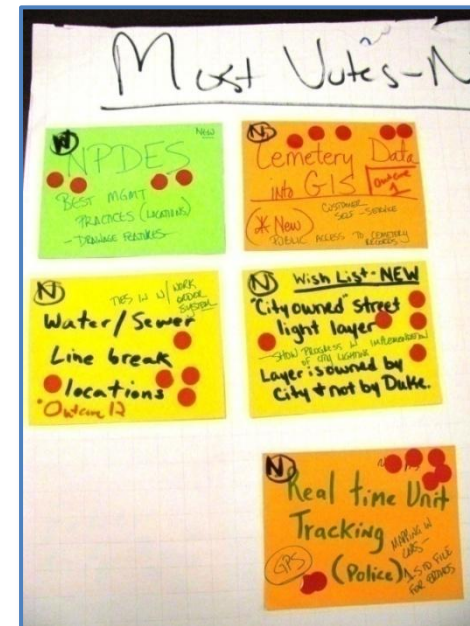
SECONDARY PRIORITIES: Below are data and project items that participants identified but that did not rise to the level of a primary priority. The GIS Division will pursue these items secondary to the twelve primary priorities over the next 2 years.

2008-2010 Secondary Priorities: Existing Data/Projects

1. Storm drainage lines (3 votes)
2. Sidewalk conditions and age (3)
3. Abandoned building locations (3)
4. Traffic sign inventory (2)
5. Hazardous materials locations (2)
6. Code Enforcement issues (2)
7. Map drainage problems (2)
8. Cable and wireless coverage areas (1)
9. Traffic signals mapping (1)
10. Track new construction (1)
11. Traffic volume data (0)

2008-2010 Secondary Priorities: New Data/Projects

1. Accident data mapped (3 votes)
2. Photos of all structures (2)
3. Cross-Country and other trails mapped (2)
4. Playground and amenities/structures (2)
5. Edge of pavement and driveway cuts (1)
6. Commercial sign inventory (1)
7. GIS layers for AutoCAD use (1 vote)
8. Downtown parking PDF map (1)
9. Overhead fiber lines mapping (0)
10. Online mapping routing (0)
11. Duke Power & Piedmont Natural Gas systems (0)
12. Private wells within the City of Salisbury(0)
13. Substandard housing and photos (0)

Land Management & Development Director Dan Mikkelson and Engineer Craig Powers listen in rapt attention.

ACTION PLANS

After consensus was reached on the primary priorities for GIS to focus on over the next 2 years, participants created ACTION PLANS to outline who should be involved in the item, who should lead, how the data should be collected, and what resources are needed to accomplish the priority. The focus was to receive direction from participants on how GIS should go about accomplishing the primary priorities. All action plans can be found in Appendix A.

ONLINE APPLICATIONS

Data is the cornerstone of GIS, however data must be shown in a way that is meaningful to the customer. Online applications allow internal and external customers to view data in an accessible fashion. Participants reviewed the existing list of online application projects, brainstormed new online applications, and prioritized those items for the next two years.
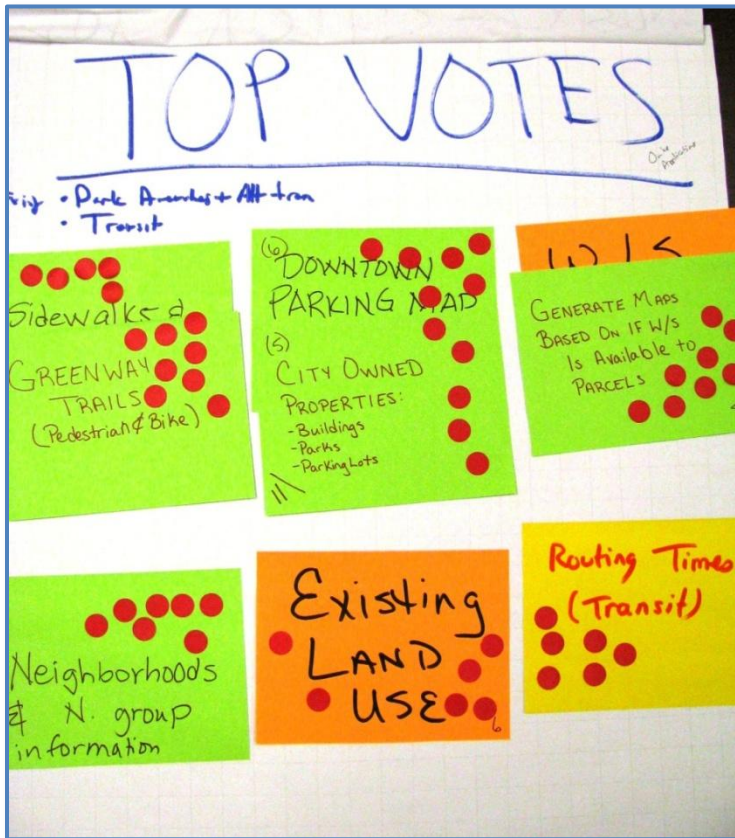
2008-2010 Primary Priorities: Existing Initiatives

1. Park amenities and transportation (12 votes)
2. Real-time bus tracking for customers (7)

2008-2010 Primary Priorities: New Initiatives

1. Online map of greenway/sidewalk connectivity for pedestrians (13 votes)
2. Online map – Is water and sewer available to this parcel? (8)
3. Online map of neighbors with interactive neighborhood information (7)
4. Online downtown parking map (6)
5. Routing times for Transit (6)
6. Online map – Existing land-use (6)
7. Internal Use – Map of City owned properties (5)

TAILORED TRAINING

The training needs of our customers have changed over the last two years as most internal GIS customers have a strong foundation from ArcGIS I and& ArcGIS II classes. Training requests from customers have become more specialized and targeted. Due to this development, participants identified current and future training needs, and provided the following requests. GIS will be developing content for these requests, many of which will be delivered in customer-friendly "lunch & learn" sessions.

2008-2010 Training Requests

1. GIS for Dummies: Basic useful information for employees & citizens (15 votes)
2. Data Munch: What data do we have and where do I find it (13)
3. Individual Project Assistance: Using GIS for a specified project (11)
4. On Demand Video Training for GIS (10)
5. Sharepoint Integration with GIS (10)
6. How to use ArcToolbox (10)
7. Cartography: Making Maps (9)
8. Create a personal basemap tailored to my needs (8)
9. How to use various ArcGIS toolbars (7)
10. GPS Data Collection: How do I do it? (7)
11. Using specialized ArcGIS extensions (6)
12. ArcGIS I & II refresher course (6)
13. Converting data for use with GIS (6)

Parks and Recreation Marketing and Community Relations Manager Elaney Hasselman really got into the Seuss spirit o the event.

This page intentionally left blank

SALISBURY FIRE DEPARTMENT

Due to scheduling conflicts, Fire Department staff were unable to participate in the initial GIS Strategic Planning sessions. GIS held a separate meeting with Fire Department staff to assess the needs of the fire service. Fire cited expansion of the city and coordination to ensure accurate dispatch and incident management in new areas as a key item within the GIS timeline. They further cited location of water lines and fire hydrants as being essentially within the GIS function. Fire concurred with other departments about the trend toward increased mobility & accessibility of GIS information while out in the field.

2008-2010 Fire Service Primary Priorities: Existing

1. **Maintain Key Data Layers:**
   a. 2, 5, 10, and 20 foot contours
   b. Address points
   c. Extra-Territorial Jurisdiction
   d. Fire stations
   e. Outfall points & lines
   f. School properties
   g. Water infrastructure, facilities, and sites
2. **Enhance Key Data Layers:**
   a. Link building footprints to address points

2008-2010 Fire Service Future Data Requests

1. Fire Department connection locations
2. Location of bridges with weight limits
3. Known confined spaces
4. Building heights and square footage
5. Building construction type & materials
6. Significant industrial (HAZMAT) uses
7. Ingress/Egress of Storm Water features
8. Location of Group Homes >= 5 stories (50ft)
9. City-owned buildings and properties
10. Emergency shelter locations
11. Storm data model
12. Pre-Planning: Linking digital photos to GIS
13. Age and history of structures
14. Expanded parcel information

2008-2010 Fire Service Project Requests

1. Identify households with medical needs
2. Dynamic link to Fire Info*
3. City-wide security cameras
4. Oblique aerial photography
5. Map/locate drainage problems
6. Greenway descriptors: Bridge weight limits
7. Map remaining hydrants
8. Track new construction
9. City-wide wireless access
10. Network analysis for routing
11. 3D visualizations of structures
12. Incident mapping*
   *new projects

2008 – 2010 Fire Service Training Requests

1. Fire-specific ArcReader training
2. Future online browser training

INTERNAL GIS GOALS

The majority of the strategic plan update focuses on the priorities and goals of customers. This section provides an internal look at the GIS Division's own goals and the direction the division would like to take over the next several years:

Provide Quality Training, Resources, & Support to Enable Users of GIS to Take Ownership of their Projects

1. Review procedures for field data collection to enable/leverage users to collect data for their projects and GIS Division.
2. Review data check-in/check-out procedures with users.
3. Empower users to develop skills that make them owners of their project(s).

Continue to Develop Data that Enables and Supports More Informed Decision Making within Departments

1. Develop Community Fact Sheet of economic, demographic, and cultural indicators
2. Build GIS Database to support the use of CommunityViz and CITYgreen.
3. Incorporate local knowledge into Enterprise GIS.
4. Acquire outside datasets where appropriate.

Increase and Enhance Communication About How GIS is Benefiting Other Departments

1. Online project database to track progress
2. GIS newsletter outlining "Benefit"
3. Continue to refine GIS website
4. Continue to develop online applications
5. Develop online training
6. Metadata documentation
7. Explore utility of GIS representative on Management Team

Maintain and Enhance Professional Standing

1. Maintain ESRI Authorized Partner Education Center
2. Maintain ArcGIS Authorized Instructor Designation
3. Maintain GIS Professional Designation – Coordinator Level
4. Obtain GIS Professional Designation – Analyst Level
5. Attend ESRI International User's Conference

Forecast Future GIS Staffing Needs

1. Continue use of interns and increase funding to allow for 2 interns at competitive salaries (1-2 years)
2. Develop business case for a "GIS Technician" whose main duties will be data collection and basic analysis. Current GIS Analyst is performing the duties of a technician and analyst at the same time – a technician will allow the Analyst to focus on how to use and package the data for better decision making (2-4 years).
3. Develop business case for a "GIS Programmer-Database Administrator". Currently, the GIS Coordinator is performing the duties of a programmer and database administrator along with management duties. A programmer will allow more time for the coordinator to focus on department level data usage and decision-making.

Planning and Community Development Director Joe Morris awards Police Deputy Chief Rory Collins the teddy bear door prize.

LISTING OF PRIORITIES

CUSTOMER FOCUS

2008-2010 Primary Priorities: Existing

1. **Backflow Prevention Devices – Location:** Needed for inspection & enforcement (7 votes)
2. **Location of Fiber-Optic Cable System:** Data Layer showing location of lines (6)
3. **Greenway Marked & Mapped:** For recreation and emergency response (6)
4. **Bus Route & Bus Infrastructure:** Data layer showing stops, shelters, and schedule (5)
5. **GIS Based Work Order System:** Design a system tailored for GIS (5)
6. **City-Wide Security Cameras[±]:** Data layer showing location of cameras and link to live picture (4)
7. **Street-Tree Inventory:** Data layer showing location of trees and descriptors (4)

2008-2010 Primary Priorities: New

1. **Police Real-Time Unit Tracking[±]:** Tracks current and historical police unit locations (7 votes)
2. **Cemetery GIS Data:** Data layer and online map of city cemeteries for customer access (5)
3. **Water-Sewer Line Break Locations:** Data layer showing breaks in order to analyze trends (5)
4. **"City Owned" Street Light Layer:** Data layer showing location of new street lights within city (5)

5. **Storm-Water Best Management Practices Locations:** Data layer showing location – needed for enforcement (4)
6. **Fats, Oils, and Grease Program:** Data layer showing grease trap locations [state mandate] (3)

2008-2010 Secondary Priorities: Existing Data/Projects

1. Storm drainage lines (3 votes)
2. Sidewalk conditions and age (3)
3. Abandoned building locations (3)
4. Traffic sign inventory (2)
5. Hazardous materials locations (2)
6. Code Enforcement issues (2)
7. Map drainage problems (2)
8. Cable and wireless coverage areas (1)
9. Traffic signals mapping (1)
10. Track new construction (1)
11. Traffic volume data (0)

2008-2010 Secondary Priorities: New Data/Projects

1. Accident data mapped (3 votes)
2. Photos of all structures (2)
3. Cross-Country and other trails mapped (2)
4. Playground and amenities/structures (2)
5. Edge of pavement and driveway cuts (1)
6. Commercial sign inventory (1)
7. GIS layers for AutoCAD use (1 vote)
8. Downtown parking PDF map (1)
9. Overhead fiber lines mapping (0)
10. Online mapping routing (0)
11. Duke Power & Piedmont Natural Gas systems (0)
12. Private wells within the City of Salisbury(0)
13. Substandard housing and photos (0)

2008-2010 Primary Priorities: Existing Initiatives

1. Park amenities and transportation (12 votes)
2. Real-time bus tracking for customers (7)

2008-2010 Primary Priorities: New Initiatives

1. Online map of greenway/sidewalk connectivity for pedestrians (13 votes)
2. Online map – Is water and sewer available to this parcel? (8)
3. Online map of neighbors with interactive neighborhood information (7)
4. Online downtown parking map (6)
5. Routing times for Transit (6)
6. Online map – Existing land-use (6)
7. Internal Use – Map of City owned properties (5)

[±]
GIS Division would serve in an advisory capacity on this goal.

CUSTOMER FOCUS

2008-2010 Training Requests

1. GIS for Dummies: Basic useful information for employees & citizens (15 votes)
2. Data Munch: What data do we have and where do I find it (13)
3. Individual Project Assistance: Using GIS for a specified project (11)
4. On Demand Video Training for GIS (10)
5. Sharepoint Integration with GIS (10)
6. How to use ArcToolbox (10)
7. Cartography: Making Maps (9)
8. Create a personal basemap tailored to my needs (8)
9. How to use various ArcGIS toolbars (7)
10. GPS Data Collection: How do I do it? (7)
11. Using specialized ArcGIS extensions (6)
12. ArcGIS I & II refresher course (6)
13. Converting data for use with GIS (6)

INTERNAL FOCUS

Provide Quality Training, Resources, & Support to Enable Users of GIS to Take Ownership of their Projects

1. Review procedures for field data collection to enable/leverage users to collect data for their projects and GIS Division.
2. Review data check-in/check-out procedures with users.
3. Empower users to develop skills that make them owners of their project(s).

Continue to Develop Data that Enables and Supports More Informed Decision Making within Departments

1. Develop Community Fact Sheet of economic, demographic, and cultural indicators
2. Build GIS Database to support the use of CommunityViz and CITYgreen.
3. Incorporate local knowledge into Enterprise GIS.
4. Acquire outside datasets where appropriate.

Increase and Enhance Communication About How GIS is Benefiting Other Departments

1. Online project database to track progress
2. GIS newsletter outlining "Benefit"
3. Continue to refine GIS website
4. Continue to develop online applications
5. Develop online training
6. Metadata documentation
7. Explore utility of GIS representative on Management Team

Maintain and Enhance Professional Standing

1. Maintain ESRI Authorized Partner Education Center
2. Maintain ArcGIS Authorized Instructor Designation
3. Maintain GIS Professional Designation – Coordinator Level
4. Obtain GIS Professional Designation – Analyst Level
5. Attend ESRI International User's Conference

Forecast Future GIS Staffing Needs

1. Continue use of interns and increase funding to allow for 2 interns at competitive salaries (1-2 years)
2. Develop business case for a "GIS Technician" whose main duties will be data collection and basic analysis. Current GIS Analyst is performing the duties of a technician and analyst at the same time – a technician will allow the Analyst to focus on how to use and package the data for better decision making (2-4 years).
3. Develop business case for a "GIS Programmer-Database Administrator". Currently, the GIS Coordinator is performing the duties of a programmer and database administrator along with management duties. A programmer will allow more time for the coordinator to focus on department level data usage and decision-making.

FIRE SERVICE FOCUS

2008-2010 Fire Service Primary Priorities: Existing

1. **Maintain Key Data Layers:**
   a. 2, 5, 10, and 20 foot contours
   b. Address points
   c. Extra-Territorial Jurisdiction
   d. Fire stations
   e. Outfall points & lines
   f. School properties
   g. Water infrastructure, facilities, and sites
2. **Enhance Key Data Layers:**
   a. Link building footprints to address points

2008-2010 Fire Service Future Data Requests

1. Fire Department connection locations
2. Location of bridges with weight limits
3. Known confined spaces
4. Building heights and square footage
5. Building construction type & materials
6. Significant industrial (HAZMAT) uses
7. Ingress/Egress of Storm Water features
8. Location of Group Homes >= 5 stories (50ft)
9. City-owned buildings and properties
10. Emergency shelter locations
11. Storm data model
12. Pre-Planning: Linking digital photos to GIS
13. Age and history of structures
14. Expanded parcel information

2008-2010 Fire Service Project Requests

1. Identify households with medical needs
2. Dynamic link to Fire Info*
3. City-wide security cameras
4. Oblique aerial photography
5. Map/locate drainage problems
6. Greenway descriptors: Bridge weight limits
7. Map remaining hydrants
8. Track new construction
9. City-wide wireless access
10. Network analysis for routing
11. 3D visualizations of structures
12. Incident mapping*
    *new projects

2008 – 2010 Fire Service Training Requests

1. Fire-specific ArcReader training
2. Future online browser training

This page intentionally left blank.

APPENDIX A: ACTION PLANS